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RISK FACTORS ASSOCIATED WITH PRECANCEROUS LESION

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Background: Visual inspection acetic acid (VIA) can be a substitute method for early detection of Precancerous lesion of cervical cancer. Therefore, efforts should be made for prevention to increase community awareness in recognizing the risk factors of cervical cancer so that it can determine the steps of prevention and early detection.
Aims: This research is to determine the risk factors associated with precancerous lesion, a study case-control in Health Center of Semarang City Year 2016).
Methods: This research is an observational analytic study with case-control design with retrospective study. The sample selection was using a simple random sampling method. The number of respondents is 98 people from 474 people doing the VIA inspection in January 2016 to December 2016, which passed the inclusion and exclusion criteria and divided into two groups, 13 people in case and 86 people in control group.
Results: There is a relationship between the results of the examination of the precancerous lesion with the risk factor of the number of respondent marriages (P- 0.038), husband historical marriage (P-0.000), smoking exposure (P-0.000).
Conclusion: Risk factors associated with the results of the examination precancerous lesion are the number of responden marriages, husband historical marriage, smoking exposure.

Keywords: Risk Factors, precancerous lesion, Cervical Cancer

INTRODUCTION

World Health Organization (WHO) reported, the incidence of cancer continue to increased from 12.7 million cases in 2008 to 14.1 million in 2012 with the number of deaths increased from 8.2 million people in 2012 to 8.8 million people In 2015. WHO projected deaths from cancer will continue to grow to an estimated 17 million deaths by 2030[1]. Nationally, the prevalence of cancer in all age populations in Indonesia in 2013 is 1.4% or an estimated 347,792 people[2]. HPV (Human Papilloma Virus) infection is noted in 99.7% of cervical cancers so HPV infection is a very important infection in the course of cervical cancer. In a case-control study also found HPV infection in precancerous lesions and invasive cancer [3]. Early detection aims to find the precancerous lesion that can still be cured, to reduce morbidity and cancer mortality [4]. Based on a preliminary study at Semarang City Health Office through interview and direct data retrieval, it was found that from 37 Health Center in Semarang City, only 13 Health Center provides visual inspection of acetic acid (VIA) for early detection of cervical cancer. Death caused by cancer also reported a considerable decreased from 529 in 2013 to 353 in 2014. Of 515 women who were examined by VIA in 2015, 33 was found positive. In 2016, the number of women examined was 474 and 40 was found positive [5].

Most of the woman have a high risk factor for cervical cancer but just a few people voluntary get screening test[6, 7]. Until now, cervical cancer prevention efforts around the world are still focusing on screening women at risk by using Pap tests and proceeding with management of precancerous lesions in which VIA is the cheapest and fastest method that can be made in this screening [8]. VIA (Visual Inspection with Acetic Acid) is an informal screening of most precancerous lesions at a very low cost. This examination can be done anytime and anywhere, so that in developing countries like Indonesia VIA examination is an initial screening alternative to detect whether a woman is at risk for cervical cancer or not caused by HPV virus[9, 10].

METHODS

It was an analytic observation research, with case-control design aims to determining what risk factors affect the incidence of precancerous lesions. The independent variables in this study were cervical cancer risk factors, including the number of marriages, husband historical marriage, and smoking exposure. The dependent variable in this study is the precancerous lesion. The test to know the result of precancerous lesion use the Visual Inspection with Acetic Acid (VIA) test.

The population in this study were all women who had done VIA examination, counted for 474 people in January 2016 to December 2016 in 13 Health Center in Semarang City. Ninety eight medical records of women was used as the instrument for analysis. This research uses the statistical analysis of distribution frequency test for univariate and chi square analysis for bivariate test whilst the effect or risk is expressed as Crude Odds Ratio (OR) using Confidence Interval (CI) of 95%.

RESULTS

Tabel 1 Distribution Characteristic of Respondents

Characteristics of respondent	Frequency	Percent (%)
Age		
Age <=35	69	70.4
Age >35	29	29.6
Age of the first mariage		
Age >= 18 years	92	93.9
Age <18 years	6	6.1
Parity		
Labor < 3	70	71.4
Labor >= 3	28	28.6
Oral contraceptive consumption		
consumption < 5 years	86	87.8
consumption >= 5 years	12	12.2
Family Cancer History		
No history	85	86.7
Have the history	13	13.3

Table 1 shows that the majority of responden were women above 35 years old (70.4%). The majority of respondents married before 18 years old (93.9%), with parity lower than 3. The vast majority of

respondents (87.8%) are currently use oral contraceptive for less than 5 year, and 86.7% responden did not have family cancer history.

Tabel 2. *Risk factors associated with Precancerous lesion*

Variabel	Precancerous lesion				*P-Vallue*	*Odds Ratio (OR)*
	Negative		Positive			
	N	(%)	N	(%)		
Number of responden's marriage						
1 time	79.9	90.1	11.1	9.9	0.038	6.833
>1 time	6.1	57.1	0.9	42.9		
Husband historical marriage						
1 time	74.6	94.1	10.4	5.9	0.000	18.668
>1 time	11.4	46.2	1.6	53.8		
Smoking exposure						
< 1 hour	69.3	94.9	9.7	5.1	0.000	13.636
>1 hour	16.7	57.9	2.3	42.1		

Tabel 2 shows that majority the number of respondents married for more than once and have positive precancerous lesion (42.9%). With a p-value (0.038) and the OR (6.833) means the number of respondent's marriage are corelated with precancerous lesion. Likewise, husbands' marital history also showed that most of the women's partner also married for more than once and developed the positive precancerous lesion with P-value (0.000) and OR (18.668). It can be implied that the husband historical marriage are corelated with precancerous lesion. In terms if of smoking exposure, majority of respondents exposed by smokes for more than 1 hour and have the positive precancerous lesion with p-value (0.000), and OR (13.636) which means that the smoking exposure are corelated with precancerous lesion.

DISSCUSSION

The results showed that respondents who married more than once had a greater risk of precancerous lesion positive. In this research, the marriage history of respondents shows that if the respondent ever married more than 1 time means the respondent has had more than 1 sex partner. Relationship data between the respondent's wedding history with precancerous lesion have P-value of 0,038 (P <0,05) and OR (6,833), so it can be concluded that the marriage history of respondents is a risk factor of positive precancerous lesions. This study is in accordance with previous research that showed women who have sexual partners more than 1 person will increase the risk of cervical pre-cancerous lesions. This was evidenced by the results of the study in which 83.3% of respondents who suffered from cervical pre-cancer lesions had more than one sex partner [11]. A more than 1 person sex partner will increase the risk of 6,833 times more for precancerous lesions than respondents who have only one sex partner, this is in line with research conducted by Wahyuningsih and Mulyani where more than one sex partner increases the risk 6.19 times Greater than respondents who have only 1 sex partner [11]. Monogamous sexual intercourse will reduce the risks of cervical cancer caused by HPV virus (Human Papioma Virus) [12]. In principle, every man has a different specific protein in his sperm. Such proteins can cause damage to cervical epithelial cells. Cervical epithelial cells will tolerate and recognize the protein, but if the woman has sex with many men eating there will be many sperm with different specific proteins and will cause damage to the cervical cells that will result in

injury. The presence of wounds will facilitate HPV infection. Women who have sex partners of 6 or more people are at increased risk of cervical cancer 10 times greater than women who have only 1 sex partner. [11].

The results of this study indicate that the husband historical marriage is associated with the risk of precancerous lesions positive, this can be seen from table 2 where the value of (0.000) and has OR (18.668) which can mean that married husband previously had a tendency to increase the risk of precancerous lesion for the respondents of 18.668 times compared to husbands who have never been married before. Human papillomavirus (HPV) is transmitted via sexual intercourse, so the habit of having sexual intercourse by men will affect the risk of precancerous lesions suffered by their partners[13]. This is why women who suffer from pre-cancerous lesions have contracted the HPV virus from their sexual partners in this case are husbands [14]. This study is in accordance with a study conducted by Mengfei Liu, where HPV transmission is transmitted primarily by men in women, 7.11, 12.13 and 4.77 / 1000 person months for each oncogenic and non-oncogenic HPV. Transmission rates of women to men were 5.56, 2.37, and 17.01 / 1000 person months for both oncogenic and non-oncogenic HPV respectively [14]. Other studies are in accordance with the results presented by Ann N. Burchell who performed by meta-analysis method whereby the results show that in men who have had previous sexual contacts or have had more sex partners than 1 risk of transmitting HPV to current sex partners [12]. Habits in sexual intercourse also affect the results of precancerous lesion testing [13].

The habit of exposure to cigarette smokes associated with the results of precancerous lesion examination. This can be observed in P-value of (0.000) or (<0.05) so it can be concluded that cigarette smoke exposure is related to the precancerous lesion. This is supported by previous studies in which HPV tumors are associated with a person's smoking status. Even in a passive smoker, smoking was defined to cause recurrence as well as death in patients with cancer due to HPV, active and passive smokers have a risk for cancer cervix 2 times larger than unexposed [3, 15, 16].The cells of the body that is heavily exposed to cigarette smoke if inhaled air alveolar epithelium and cigarette smoke can cause oxidative stress in these cells, causing cell and tissue death[17]. Tobacco smoking is a cited cause of cervical cancer, but whether it causes cervical malignancy independent of human papilloma virus (HPV) infection is unclear[18] .Exposure to cigarette smoke can also affect a person's uterine womb[19]. Cigarette smoke is well known for decrease the body's immune response to HPV virus and can damage the epithelial DNA of the cervical cells. The large number of women as passive or active smokers has an impact on the risk of cancer formation[15, 20]. The result corresponds to research conducted by Eva Sulistiowati and Anna Maria Sirait found that concentration of nicotine in women exposed to cigarette on cervical mucus is 56 times more higher than in serum, which will be lowering the local immune status to be kokarsinogen from viral infections[21]. This study is also in line with research conducted by Wahyuningsih and Mulyani who found that 75% of respondents exposed to cigarette suffer from cervical precancer lesions [11]. So it can be concluded that women exposed to cigarette smoke are at greater risk of HPV infection than women who are not exposed to cigarette, this is indicated by an OR of 13.636 which means that respondents exposed to cigarette smoke have a risk of 13.636 times greater for the positive precancerous lesion. This study is also in line with research conducted by Wahyuningsih and Mulyani, respondents exposed to smoke had a 3.545 times greater chance of having cervical precancer lesions than respondents who were not exposed to smoke[11].

CONCLUSION

The result of bivariate analysis showed that the risk factors associated with precancerous lesion occurrence are the number of marriages of the patient, husband historical marriage, and smoking exposure. The study also confirmed that many factors lead to the incidence of cervical cancer therefore further research related

to precancerous lesion examination IVA examination is needed since it is the easiest and cheapest examination for the screening of a precancerous lesion.

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